



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/779,952

02/13/2004

Yee-Chung Fu

ANS-P105

9153

32566

7590

01/06/2005

PATENT LAW GROUP LLP  
2635 NORTH FIRST STREET  
SUITE 223  
SAN JOSE, CA 95134

EXAMINER

WILSON, ALLAN R

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 01/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Ak

<b>Office Action Summary</b>	<b>Application No.</b> 10/779,952	<b>Applicant(s)</b> FU, YEE-CHUNG	
	<b>Examiner</b> Allan R. Wilson	<b>Art Unit</b> 2815	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on 07 December 2004.

2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) 1-33 is/are pending in the application.

    4a) Of the above claim(s) 3 is/are withdrawn from consideration.

5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

6) ☒ Claim(s) 1,6,9-12,14,16 and 18 is/are rejected.

7) ☒ Claim(s) 2,4-8,13,15,17 and 19-33 is/are objected to.

8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
    a) ☐ All    b) ☐ Some \* c) ☐ None of:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

### *Drawings*

The drawings are objected to under 37 CFR 1.83(a). The drawings 6A-6J must show every feature of the invention specified in the claims. Therefore, the second plurality of stationary comb teeth and the plurality of rotational comb teeth are interdigitated out-of-plane must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 6, 9-12, 14, 16 and 18 are rejected under 35 U.S.C. § 102(e) as being anticipated by Onoda et al. ("Onoda") U.S. Patent Application Publication No. 2004/0155556.

With regards to claim 1, Onoda illustrates in figures 1-37, particularly figure 1, (entire document) a mirror 20 having a first surface and a second surface, wherein the first surface

Art Unit: 2815

comprises a plurality of trenches 21; a beam 17 connected to the mirror; a plurality of rotational comb teeth 18 connected to the beam; and a first spring 16a connecting the beam to a first bonding pad 34 (top of fig.).

Note: A torsion beam is a type of spring, the beam/spring returns to the original position when the force is released.

With regards to claim 6, Onoda illustrates in fig. 1 a second spring 16b connecting the beam to a second bonding pad 34 (bottom of fig.).

With regards to claim 9, Onoda illustrates in fig. 1 a first plurality of stationary comb teeth 25a, wherein the first plurality of stationary comb teeth and the plurality of rotational comb teeth are interdigitated in-plane.

With regards to claim 10, the claimed “the first plurality of rotational comb teeth is coupled to a first steady or oscillating voltage and the first plurality of stationary comb teeth is coupled to a second steady or oscillating voltage” is not considered to add any structure to the claimed device and is considered to be intended use of the device. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987). Onoda does illustrates in fig. 30A an oscillating voltage applied to the first plurality of stationary comb teeth 25a.

With regards to claim 11, Onoda illustrates in figs. 1 and 6B a second plurality of stationary comb teeth 25b, wherein the second plurality of stationary comb teeth and the plurality of rotational comb teeth 18b are interdigitated out-of-plane.

Art Unit: 2815

With regards to claim 12, the claimed “the second plurality of stationary comb teeth is coupled to a third steady or oscillating voltage” is not considered to add any structure to the claimed device and is considered to be intended use of the device. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987). Onoda does illustrates in fig. 30B another oscillating voltage applied to the second plurality of stationary comb teeth 25b.

With regards to claim 14, Onoda illustrates in figs. 3 and 4 the beam 17 (between 18a and 18b) further comprises a plurality of holes 21.

With regards to claim 16, Onoda illustrates in figs. 1, 3 and 4 a gap surrounding the mirror 20 has a width greater than gaps around other components 36 on the same layer as the mirror.

With regards to claim 18, the examiner had to assume what the product would be by the process claimed. For example, in claim 18 it was assumed that the product was trenches. The claim that it was “etched trenches and laser trimmed trenches” was not considered to have full patentable weight. A “product by process” claim is directed to the product per se, no matter how actually made, MPEP 2113 “Product-by-Process Claims,” *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90; *In re Marosi et al*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a “product by process” claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether

Art Unit: 2815

claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear.

***Allowable Subject Matter***

Claims 2, 4-8, 13, 15, 17 and 19-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Akkaraju et al. (illustrates a micromechanical optical switch), Lemkin (illustrates MEMS comb actuator), Taylor et al. (illustrates a mirror device) and Conant et al. (illustrates an electrostatic combdrive with a mirror).

Field of Search	Date
U.S. Class and subclass: 257/414, 415, 432	January 4, 2005
Other Documentation: None	N/A
Electronic data base(s): EAST (USPAT, US-PGPUB, JPO, EPO, Derwent, IBM TDB)	January 4, 2005

Any inquiry concerning this communication or earlier communications from an examiner should be directed to Primary Examiner Allan Wilson whose telephone number is (571) 272-1738. Examiner Wilson can normally be reached 7:00-4:00 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2815

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "A. R. Wilson", with a long horizontal flourish extending to the right.

Allan R. Wilson  
Primary Examiner  
January 4, 2005